Emergency Contraception Pill - Controversies and Use

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SUMMARY

Emergency contraceptive pills (ECP) are effective, safe and cheap, with profound global health and economic benefits. Patient education and easy access to ECP will contribute immensely to avoiding unwanted pregnancies and unsafe abortions. Issues related to morality, its perceived status as an abortifacient and harmful behaviour should it be easily available, has limited the widespread use of ECP in many countries.

KEY WORDS:
Emergency contraception, Abortifacient, Unwanted pregnancy, Unsafe abortion

INTRODUCTION

Emergency contraceptive pill (ECP) is defined as the use of hormonal drugs within a few days of unprotected intercourse to prevent pregnancy[1]. Fifty five thousand unsafe abortions take place around the world everyday, leading to more than 200 maternal deaths daily[2]. The widespread use of emergency contraception could prevent one million abortions and two million unintended pregnancies that end in childbirth yearly[2]. Despite its huge health and economic benefits, it does not enjoy total global endorsement and is embroiled in controversies in many countries. Controversies related to ECP acting as an abortifacient, and the perceived disadvantages that may arise should it be available over the counter as a non-prescription drug, limits its widespread use. Although these arguments appeal to the moral values of the conservative sector, they are at variance with the practical needs of a pluralistic society.

Ongoing litigation regarding its manufacture and sale in Latin America has further enhanced its false reputation as an abortifacient [3]. Historically, a single dose of estrogen administered after coitus was shown to prevent implantation in rodents[4]. Mclean and colleagues[5] confirmed this finding in non-human primates and suggested high dose estrogen as ECP to avoid pregnancy in rape victims. Thereafter, many studies demonstrated that progestogen, either singly or in combination with lower doses of estrogen was as effective as ECP in humans[2, 6, 7, 8],. Almost all made references to the original observation in rodents to explain the mechanism of action. This coupled with poorly updated knowledge of providers, misreporting in the mass-media, ethical constraints of demonstrating interference of post-fertilization events and poor funding of such research, contributed to the hypothesis gaining "notoriety" as a proven fact, often quoted in textbooks. Emergency contraception with levonogestrel and mifepristone mainly inhibit or delay ovulation. Whether luteinizing hormone surge is blocked or other processes involved in ovulation are affected remain unclear9. Five other original papers show that ECP interferes with the ovulatory process [10.11.12.13, 14].

Availability of ECP over the Counter

Voluntary parenthood is a strong motivating factor in ECP usage. Dedicated access to ECP has been available for some time to the European population[15]. Despite its vast preventive efficacy, it remains unavailable to women who need them most especially in developing countries [16]. For ECP to realize its full potential, it has to be widely available, easily accessible, cheap, effective, safe and the target population is well informed [17].

ECP' safety profile has been extensively evaluated, and found to be safe, [18, 19, 20, 21]. WHO concluded that there is no absolute medical contraindication with levonogestrel (LNG) only regime[2, 21]. Inadvertent use during pregnancy is neither harmful to mother or fetus [20]. In a large study, no venous thromboembolism was reported among 73,302 women, who used a total of 100,615 doses of ECP [22]. However, patients with severe cardiovascular complications, migraine and severe liver disease require careful follow-up and advised on LNG-only regimes.

Since the safety profile has been validated, ECP proponents advocate its availability as a non-prescription, over the counter drug, as the most sensible and practical way of ensuring easy accessibility. Unnecessary pelvic examination, urine pregnancy test, consent form, consultation with doctor and the need for prescription limit its access[17]. Vulnerable adolescents who engage in sexual activities prior to commencing contraceptive use are particularly suitable for ECP. Opponents argue that this encourages promiscuity and pregnancy among teenagers, undermines the use of conventional contraceptive methods, increases casual unprotected sex and multiple uses over a limited time period. However, findings from several large studies have convincingly refuted the predictions [23, 24, 25, 26].

Clinical Aspects of ECP

The Yuzpe regime consists of two doses of 100 micrograms of ethinylestradiol and 500 micrograms of levonogestrel each, to

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Table I: Indications for ECP

1. Unprotected vaginal intercourse (willing, coerced, raped)
2. Breakage, slippage or incorrect use of condom,
3. Three or more consecutive missed combined oral contraceptive
4. More than 3 hours delay for progestogen-only pill
5. More than 2 weeks delay for progestogen contraceptive injection
6. Failed coitus interrupts
7. Dislodgement, breakage, tearing or early removal of a diaphragm or cervical cap
8. Miscalculation of periodic abstinence method
9. Expulsion of intrauterine contraceptive devise

- Adapted from Croxatto et al[3]

Table II: ECP dosage

Emergency Contraception Pill	Recommended Dosage
1. Levonogestrel	a) 1.5mg single dose b) 0.75mg each dose (2 doses, 12 hours apart)
2. Yuzpe regime	100ug ethinylestradiol and 500ug levonogestrel each dose (2 doses, 12 hours apart)
3. Mifepristone	10mg single dose

be taken 12 hours apart. It is one of the earlier and better known regimes. This along with levonogestrel alone regime and mifepristone remain the most well researched of ECPs. A large comparative trial by WHO found a 1.1% pregnancy rate for the conventional levonogestrel alone regime (two doses of 0.75 milligrams of LNG, at 12 hours interval), compared to 3.2% pregnancy rate for the Yuzpe regime, when administered within 72 hours after an unprotected sexual intercourse[27]. A much larger, more recent trial by WHO compared the conventional two dose LNG regime (two doses of 0.75 milligrams LNG, 12 hours apart) with a single dose of 1.5 milligrams of LNG [28]. The results demonstrated the high effectiveness of both regimes, but concluded that the single dose regime holds a slight advantage, albeit not significant (1.3% compared to 1.7% respectively when administered within 72 hours after unprotected coitus). Treatment efficacy declines, when the time interval between the act of coitus and ECP administration is prolonged. WHO estimates a 50% increase in the risk of pregnancy for every 12 hours delay in taking the first pill [29].

The most important adverse effect of ECP is vomiting and if it happens within the first two hours of taking the first pill, repeat dosing is required to maintain effectiveness of ECP. LNG alone regime has less incidence of vomiting (5.6%) compared to the Yuzpe regime (18.8%)[27]. Other less frequently reported side effects include headache, dizziness, fatigue and breast tenderness. A single oral dose of 1.5mg of levonogestrel alone remains the best option for ECP, in terms of effectiveness, ease of administration, safety and adverse effects [21, 28].

ECP can be used independent of the day of cycle in which the coital act took place. Traditionally ECP was recommended up to 72 hours after unprotected sexual intercourse, but the time line can be extended up to 120 hours (five days) in light of recent findings by Hertzen *et al* [28], which showed an acceptable pregnancy rate of 2.4% (for the two dose LNG regime) and 2.7% (for single dose LNG regime). But users need to be counseled on the slightly higher failure rate.

ECP does not offer further protection against another unprotected sexual encounter occurring in the same cycle [28]. Repeat dosing is advised in such instances but users must be counseled against such practice as it would cause menstrual irregularities and worsening side-effects compared to usual contraceptive pill. Furthermore conventional contraceptive method offers better protection against pregnancy. Anti-emetics before the second dose are advised in the event of vomiting after the first dose. The subsequent menstruation following an ECP usage may be delayed or comes earlier by a few days[29]. Pregnancy needs to be excluded when there is a delay of more than seven days. It should also be stressed that ECP does not protect against sexually transmitted diseases.

Another effective ECP is mifepristone, a synthetic steroid with potent anti-progestational and anti-glucocorticoid properties. A single dose of 600 milligrams of mifepristone within 72 hours of unprotected coitus is slightly more effective (1.3% pregnancy rate) compared to the Yuzpe regime, with added advantage of significantly less adverse effects compared to all the other regimes [30]. A much lower dose of 10 milligrams of mifepristone was also found to be equally effective (1.2% pregnancy rate), even at a longer post-coital treatment of 120 hours [31]. It is popular in China, though its high cost is a limiting factor.

CONCLUSION

Conservative societal values and ethics often create barriers to easy access and availability of ECP, which transgresses principles of patient autonomy and beneficence. Scarcity of local data on the subject precludes any definitive conclusions; perceived breach of morality when addressing sexual health, shared by some segments of society further compounds any tangible progress. The status quo remains, in many communities few understand the many advantages of ECP. A positive outlook by policy makers, improvement of provider's knowledge and overcoming moral barriers are strategies to be adopted for more widespread use of ECP among vulnerable individuals.

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MCQ

1. Regarding the use of emergency contraceptive pills
   A. Inadvertent use during early pregnancy causes CNS malformations of fetus
   B. There is no increased risk of thromboembolism
   C. Contraindicated in liver disease
   D. Very common among teenagers
   E. Encourages high risk sexual behaviour

2. Emergency contraceptive pills after unprotected sexual intercourse
   A. Is indicated if more than 3 COC are missed consecutively
   B. Cannot be used if more than 72 hours after coitus
   C. Is indicated if progestogen contraceptive injection is delayed by one week
   D. Can only be used in luteal phase of menstrual cycle
   E. Cannot be used in miscalculation of periodic abstinence method

3. Regarding the Yuzpe regime
   A. It consists of 2 doses of 500ug of ethinylestradiol and 100ug of levonogestrel
   B. Has more side effects compared to levonogestrel alone regime
   C. Conventional combined oral contraceptives can be used
   D. Has a pregnancy rate of 1.1%
   E. Vomiting within 2 hours of first dose requires repeat dosing

4. Emergency contraception pill using levonogestrel
   A. Is more effective when given as a single 0.75mg dosage
   B. Has lower side effects than regular COC when used repeatedly
   C. Is still effective 5 days after unprotected coitus
   D. Breast tenderness is a common complaint
   E. Is an abortifacient

5. Emergency contraceptive pill in the global perspective
   A. Is more readily available in developing countries
   B. Most European countries require doctor's prescription before dispensing
   C. Is an expensive drug to manufacture
   D. Mifepristone is popular in China
   E. Majority of providers are well versed with ECP